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# WTMJ

## Use W9XAZ to Broadcast on Short Wave

BY DX

[Short Wave Editor]

SOME radio stars grow enthusiastic when they receive fan mail from points a thousand miles away, but the artists at WTMJ have become more blasé since their programs have been rebroadcast on W9XAZ, The Journal's experimental short wave station on 31.6 megacycles. They look for mail from Hawaii, England, France, Germany and Japan!

And, while such mail is interesting, the short wave station itself—W9XAZ—is even more so. Let's look at it behind the scenes.

In 1934, when the federal communications commission issued a license to W9XAZ, the first station in the country authorized to broadcast on frequencies above 31 megacycles, a new field for ultra high frequency experimentation was opened. The Journal station was granted a power of 500 watts, the highest authorized to any "apex" station, all others being limited to 100 watts.

Installed in the penthouse atop the Schroeder hotel, Station W9XAZ, one of approximately 15 such high fidelity broadcasters now transmitting on either 31.6 megacycles (9.5 meters) or 41 megacycles (seven meters), has been broadcasting experimentally almost continuously since December, 1934.

The purpose of W9XAZ and other stations operating on 31.6 megacycles is to determine whether the ultra high frequencies may be utilized advantageously in the future for regular high fidelity broadcasting intended purely for local reception. The propagation characteristics of these ultra high frequencies, unlike the ordinary short wave spectrums, seem to point toward this goal ultimately being reached.

The results of The Journal's tests on 31.6 megacycles for a period of a year and a half are marvelous, to say the least. Many obstacles, at first confronting W9XAZ engineers, have since been overcome and much has been learned with regard to the behavior of the nine-meter signals.

### Static Missing

There are many advantages in broadcasting on the ultra high frequencies. Reception on these frequencies is extremely steady and crystal clear within a primary service area covering a radius of about 15 miles from the transmitter. There is no fading within this local area.

Another remarkable advantage lies in the fact that atmospheric disturbances have no effect whatsoever on frequencies above 30 megacycles. During a local thunderstorm, for example, when reception of powerful locals in the broadcast band is ruined with the usual crashes of static, the high frequency signal is entirely clear and free of any static.

The secondary service area, explains Phil Laeser, engineer in charge of W9XAZ, may be termed the DX area, and extends indefinitely beyond the local service area. But the important point in this connection is the fact that the signals beyond the local area are very erratic and unreliable. Fading, which is entirely absent within the local area, is quite troublesome, while reception varies greatly from day to day and much more so than in the ordinary short wave bands.

### Heard in Europe

Although the DX range is undesirable for ultra high frequency transmission distant reports were essential in compiling data as to

the characteristics of the signals. This scribbler consented to make a recording or foreign announcements in six languages (English, Spanish, French, German, Italian and Polish) and this was used for several months.

The most distant reception reports have been received from the Hawaiian islands, Central and South America and Europe. In England Station W9XAZ was continuously being reported with great volume and excellent quality on simple one "valve" receivers. The Journal's station was said to have a far superior signal to any other "apex" station heard in Europe.

Letters from Hawaii indicated that the signals of W9XAZ have been rather consistent and one listener informs us that he listened at one time to the entire account of a football game broadcast over W9XAZ with great interest. Hawaiian amateurs often sent radiograms during a Saturday amateur club broadcast saying they were hearing the programs quite well.

European listeners have been hearing The Journal station afternoons and evenings (morning and afternoon here), Latin America at all times of the day while Hawaiians were reporting the station mornings and afternoons (afternoon and evening here). Thus, at different times of the day, Station W9XAZ was being picked up in different portions of the earth.

### Amateurs Help

The schedule of broadcasts from W9XAZ was usually from 1:30 to 7 p. m. but at times the station was also on the air in the mornings. WTMJ programs were put on over W9XAZ most of the time while several times a week the local amateur radio clubs were given an opportunity to present their own programs. The reason for this was that the greatest audience of W9XAZ is composed of either amateurs or short wave experimenters.

The Radio Amateurs Club of Milwaukee, an affiliate of the American Radio Relay league, conducted an interesting program each Saturday afternoon and claimed a large audience not only locally but also on the west coast and Hawaii. Once a month the club broadcast its regular meetings. The Kilocycle club transmitted its programs each Saturday evening over W9XAZ.